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## THE "RECOGNITION-THEORY" OF PERCEPTION.

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Paradoxically expressed, the theory under criticism asserts that to *cognize* is to *recognize*; *connaître* is *reconnaître*; *kennen* is *wiedererkennen*. Hence the name I give it—the Recognition-Theory of Perception. To be consistent, the supporters<sup>1</sup> of this theory can draw no distinction between perception and recognition, at least in kind. Light distinctions of grade there may be, but perception and recognition are one and the same thing; perception is recognition. First the statement of the theory, then the criticism.

### THE THEORY.

"A simple process of re-cognition is involved in all cognition" (Sully). This process of cognition (perception) Sully accordingly designates "automatic assimilation or recogni-

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<sup>1</sup>The supporters of this theory are truly legion, the chief one at present being probably Prof. Höffding. Among the many may be cited Empedocles and Democritus, "Like is known by like." Kant, K. d. r. V. (Kehrbach, §127), "Es sind drei subjective Erkenntnisquellen, worauf die Möglichkeit einer Erfahrung überhaupt und Erkenntnis der Gegenstände derselben beruht: *Sinn, Einbildungskraft* und *Apperception*. . . . Der *Sinn* stellt die Erscheinungen empirisch in der *Wahrnehmung* vor, die *Einbildungskraft* in der Association (und Reproduction), die *Apperception* in dem *empirischen Bewusstsein* der Identität dieser reproductiven Vorstellungen mit den Erscheinungen, dadurch sie gegeben waren, mithin in der *Recognition*." Herbart in his "Apperceptionslehre." J. S. Mill in his edition of "James Mill's Analysis," I, 112, 113. H. Spencer, "Princ. of Psych.," I, 267, 270. Bain, "Senses and Intellect," 4th ed., 489. Sully, "The Human Mind," I, 181, 196. Wundt, "Logik," 2te Aufl., I, 17; "Physiol. Psychol.," II, 469. Ward, Ency. Brit., Art. Psych., pp. 52, 60; also articles in *Mind* on "Assimilation, etc." Höffding, "Psychologie im Umriss" (2te deutsche Aufl.), 161 ff. Vierteljahrsschrift f. wiss. Philos., XIII, 425-458; XIV, 27-40. Wundt's "Studien," VIII, 86-96.

tion." "Such assimilation is automatic or 'unconscious' in the sense that there is no separate and distinct recalling of a past sensation, and clear awareness of the relation of the present sensation to its predecessors" ("Human Mind," I, 181). We are informed that, so considered, assimilation is the necessary pre-condition of all association, thus making the Law of Contiguity secondary to the Law of Similarity.

Helmholtz writes ("Zeitschrift f. Psych. und Physiol. der Sinnesorgane," Bd. VII, Heft 2, §88): "Man pflegt als *Anschauung* eine solche Entstehung von Vorstellungen zu bezeichnen, bei denen in bewusster Weise nur der sinnliche Eindruck percipirt wird und danach die Vorstellung des Objects in das Bewusstsein springt, ohne dass weitere Zwischenglieder des Vorstellungskreises zum Bewusstsein kommen." Exner (Entwurf zu einer physiol. Erkl., etc., §234) defines the sense impression in perception as "ein lebhafter Process, der in der Rinde stattfindet, der aber keinen eigentlich psychischen Character trägt." Helmholtz, in the second edition of his "Tonempfindungen," §101, writes: "Empfindungen nennen wir die Eindrücke auf unsere Sinne, insoferne sie uns als Zustände unseres Körpers (speciell unserer Nervenapparate) zum Bewusstsein kommen; Wahrnehmungen, insoferne wir uns aus ihnen die Vorstellung äusserer Objecte bilden." I may add here that we are not conscious of sensations as states of our body or of the nerve-apparatus. *Red* is obviously the sensation red, without any reference to the retina or any part of our body; moreover we are conscious of no process by which we form a presentation of external objects out of the sensations. It is false description and bad hypothesis.

Herbert Spencer goes still further and reduces all cases of association to the one law, viz., association by similarity, at the same time making every perception a case of the law of association by similarity. His perception-theory is, therefore, the recognition-theory. "Every relation, then, like every feeling, on being presented to consciousness, associates itself with like predecessors. Knowing a relation, as well as knowing a feeling, is the assimilation of it to its past kindred; and knowing it completely is the assimilation of it to past kindred exactly like it. . . . Hence results the so-called Law of Association by Contiguity. When we analyze it, contiguity resolves itself into likeness of relation in time, or in space, or in both" ("Princ. of Psych.," I, 267). "Thus the fundamental law of association of relations, like the fundamental law of association of feelings, is that each, at the moment of presentation, aggregates with its like in past experience. The act of recognition and the act of asso-

ciation are two aspects of the same act. And the implication is that, besides this law of association, there is no other" (Ib., 270).<sup>1</sup>

The full faith that should be in us is found in Bain: "In the perfect identity between a present and a past impression, the past is recovered and fused with the present, instantaneously and surely. So quick and unfaltering is the process that we lose sight of it altogether (!); we are scarcely made aware of the existence of a reproductive link of similarity in the chain of sequence. When I look at the full moon, I am instantly impressed with the state arising from all my former impressions of her disc added together" ("Senses and Intellect," 4th ed., 489).

Dewey adds his testimony ("Psych.," p. 180): "In perception past experiences are *wholly absorbed or lost* in the present. When we see a man we do not recognize that there are involved in this perception *all the other men* which we have seen, and that it is only through the *ideal* presence of these experiences in the present data that the latter signify to us a man. But such is the fact."

Wundt gives the following definition of assimilation, which process, according to his belief, takes place in perception: "An assimilation takes place, then, when a new presentation enters consciousness and renews or revives former presentations similar to it, and when these elements fuse to a single presentation. In this case we perceive nothing of the reproduction-process." See also "Physiol. Psych.," II, 469.

The principal exponent of this theory, however, is Höfding. He informs us that it is difficult to classify "immediate recognition," with which he identifies perception, since it is neither sensation nor idea (representation), and yet contains something of the character of both. It reminds us of the sensation, because it has for an object something present, while the idea is only a memory presentation (*Erinnerung*). "This middle position between sensation and idea, we can theoretically express by saying that in recognition both an idea as well as a sensation element is present. If we name the latter A, the former  $\alpha$ , we can express recognition by  $(A + \alpha)$  or  $(\alpha_a)$ , denoting by the brackets that we distinguish between the two elements (which in reality do not allow of being sep-

<sup>1</sup> *Vide* the misunderstanding in James' "Princ. of Psych.," I, 257 and 259: "Mr. Herbert Spencer has still more recently tried to construct a psychology which ignores association by similarity." Spencer somewhere says: "Were it not that the steps can be recalled, it would seem absurd to say that when the reader takes in at a glance the sentence, 'This is true,' he not only classifies each word with the before known like words, but each letter with the before known like letters."

arated) only by means of abstraction. *It can be said, then, that in recognition an idea is contained in so far as the same condition works in recognition, which in other circumstances would have been able to have led to a recall of that which has been experienced as an independent idea.* The idea contained in this way in recognition we will call an *implicate* (*gebundene*) *idea*, in contradistinction to the *free* ideas which enter consciousness as independent members of the conscious content. Recognition can be also named a memory (*Erinnerung*), but, however, an *implicate memory*, because that which one remembers does not enter consciousness as a free idea. It can also be called an *implicate comparison*, since it (the recognition) arises through similarity of the present impression with a former one, distinguishing itself, however, from the proper free comparison by the fact of the members, which were joined together by means of similarity, not making themselves felt independently in consciousness." ("Psychologie," 2te deutsche Aufl., 161-166.) Again, on page 239, he says : " This principle (principle of identity,  $A = A$ ) corresponds to recognition, which is the presupposition of all association."

### *Criticism of the Theory.*

After having endeavored to give the theory fully, I shall endeavor to give my objections to it in as concise a manner as possible. Some of them are objections to the false description of the facts, some to impossibilities involved in the theory, some to the unnecessary fabrication of hypotheses, and others to the lack of explanation for certain facts.

1. *Perception is not, as stated, an act of memory.* When I look upon the sun, it is the sun to me and nothing more. I do not remember all or any of the former suns which I have seen. It is the sun at once to me, and if the name is expressed upon the sight of it, it is only a case of ordinary association by contiguity. In fact, is it not impossible to experience at the same moment of time the perception and the so-called memory-image of the same object? Who can do it? If I burn myself, I know it is hot without any reference whatever at the moment to former experiences of burning. Ask me at the moment of burning if it is to me a remembrance of former burnings, or if there is any reference to past burnings, and the answer will obviously be a strongly negative one. Ask the patient whose tooth is being pulled out if the pain is a past pain, or if it has any reference to a past pain. Absurd. It is all there in the present. It is an all *here* and *now*, and the fact ought to be obvious to everybody. Repeat or read the letters of the

alphabet consciously, and how many of us have the slightest remembrance of each letter as having been seen before? And yet it is asserted by these theorists that before each letter is known there must arise first the present sensuous impression of each letter, and secondly a revived idea or memory-image (*Erinnerung*) of each which "identifies," "recognizes," or "fuses" with the sensuous impression. After this identification, recognition, or fusion, each letter respectively is known. "To cognize is to recognize; *connaître* is *reconnaître*, and *kennen* is *wiedererkennen*." Each one can repeat or read the alphabet for himself and judge of the accuracy of the theory. Spencer himself says: "To ask a man whether he remembers that the sun shines, that fire burns, that iron is hard, would be a misuse of language" (I, 456), and yet Höffding and Spencer demand a memory-element in each perception.

Höffding also asserts that in his formula of perception ( $\frac{A}{a}$ ),  $A$  represents the sense-impression of the object, and  $a$  the idea- or memory-presentation. He also says the principle of identity,  $A = A$ , corresponds to recognition ("Psychologie," p. 239). In the perception-formula, then,  $a = A$ , or is identical with  $A$ ; but  $A$  is a sense-impression, therefore  $a$  is a sense-impression. Again, if they are identical, how are we to distinguish the one as a sense-impression and the other as a memory-presentation, or how are we to distinguish them at all?

Lotze says ("Metaphysik," §265): "One would not be able to know anything at all of this fact, viz., of the reproduction of a former  $a$  by the present  $a$ , if both of them were simply indistinguishable and at the same moment of time there; in order to judge of the present one as repetition of the former one, we must be in a position to distinguish them both."

Later, however, we shall learn from their own admissions that this memory element (call it *implicate* or what you will) is *unconscious*, a matter belonging to the subterranean workings of that which lies under the threshold of consciousness. If unconscious, then for us obviously it does not exist as a conscious or mental fact. To say that certain phenomena (*e. g.*, this memory-element or these two "fusing ideas") are in consciousness at a certain given moment only *theoretically* (Höffding), *metaphorically* (Wundt), *abstractedly* (Höffding), or *ideally* (Dewey), is to say that they are *not* there, is to say that "the process is lost sight of altogether" (Bain), or that the phenomena are *unconscious* (*i. e.*, non-existent), as Höffding, Wundt and others distinctly assert. Yet the implicit understanding amongst these writers is that the phenomena in question *are* there in consciousness.

2. *Perception does not, as stated, involve comparison.* Again, an appeal to consciousness amply justifies this objection. When I perceive the table before me, I do not compare the table with any idea of the table seen in past experiences; although, *after* having perceived it, another image of it may arise by association and the two may be compared. The table must obviously, however, be first perceived. It is, however, only "an implicate (*gebundene*) comparison" which is said to take place between the two elements. The two members in "free comparison" are conscious; in this elementary comparison on the contrary *unconscious*.<sup>1</sup>

Wundt ("Logik," I, 17) informs us that in reference to the reproduction or recall of the memory-idea by the sense-impression, we perceive nothing of it. Consequently we perceive nothing of the comparison. Bain says ("Senses," 489): "In the perfect identity between a present and a past impression, the past is recovered and fused with the present, instantaneously and surely. So quick and unfaltering is the process that we lose sight of it altogether (!)." Sully ("The Human Mind," I, 181): "Such assimilation is automatic or unconscious," etc. Categorical enough are the statements and amazing the self-satisfied knowledge of the unconscious. I can assert just as well the opposite of what these writers affirm of the unconscious and it would exercise all the subtlety and keenness of a mediæval scholastic, not to mention that of Messrs. Höffding, Wundt, etc., to disprove my statements. More, their statements of an unconscious conscious act are too obviously impossible to demand refutation.

We are also informed that this act of perception (= recognition or *Wiedererkennen*) is an act of association by similarity. The sense-impression calls up by association by similarity the similar idea of the same object. Moreover, Höffding calmly informs us that this is also an act of *comparison*. "*It can also be called an implicate comparison, since it arises through similarity of the present impression with a former one.*" Let us suppose *A*, the sense-impression, to be present in consciousness, the problem is, how is *a*, the similar idea, to be brought there by comparison? Comparison, manifestly, presupposes the presence of the two before it can exist at all. Comparison with only one thing to be compared is worse than a distinction without a difference.

Again, supposing the comparison to be made after the two have arrived in consciousness, what is the need of a comparison if *A*, the sense-impression, is the object perceived, and

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<sup>1</sup>"Viertel. f. wiss. Philos.," XIV, §198.

*a*, the idea, is only another former impression of the object? How can, or why should, *a* identify, recognize, or fuse with *A* when *A* is just as much the object perceived as *a*, and why the comparison? F. H. Bradley ("Principles of Logic," chap. Association of Ideas) gives some excellent criticism on the untenability of the view that association by similarity can be brought about by comparison.

The discussion is much shortened, however, by the fact that the comparison is said to take place unconsciously.<sup>1</sup> It is still further shortened by Höffding's statements that the sense-impression *A* and the idea *a* (which?) are *contemporaneous, different, indistinguishable, identical*, and, to put the corner-stone on, *unconscious*.

3. *Perception does not involve the so-called process of "psychical chemistry."* The two elements *A* and *a* are said to "fuse" into one indistinguishable whole. "There is here accordingly an activity displayed, *the result of which* presents itself to consciousness, although it itself was exercised unconsciously."<sup>2</sup> The two elements are said to be only "*theoretically*" (not as a matter of fact?) present in consciousness. We are said to distinguish between them "only by means of abstraction."<sup>3</sup> And Wundt knows nothing of the act of reproduction in the act of assimilation and perception; but nevertheless affirms that the two elements fuse (*verschmelzen*) to a single presentation ("Logik," I, 17). He says ("Physiol. Psych."), moreover, that the word "union" (*Verbindung*) has a "metaphorical" meaning.

If it be dark and mysterious to those initiated into the hidden secrets of the unconscious, what must it be to the uninitiated? What is in consciousness is surely a matter of fact, and not "theoretically" or "metaphorically" there. And how two unconscious ideas fuse, identify, recognize and compare each other in the unconscious and produce a totally new result is to me unaccountable. (*Vide* Stumpf's criticism of Hartley's and J. S. Mill's doctrine of "psychical chemistry," "Ursprung der Raumvorstellung.") James<sup>4</sup>: "Moreover, if feelings can mix into a *tertium quid*, why do we not take a feeling of greenness and a feeling of redness and make a feeling of yellowness out of them? Why has optics neglected the open road to truth, and wasted centuries in disputing about theories of color composition which two minutes of introspection could have settled forever?"

<sup>1</sup> *Vide* Dewey, "Psychology," p. 180; Höffding, "Viertel. f. wiss. Philos.," XIV, 198.

<sup>2</sup> Höffding, "Viertel. f. wiss. Philos.," XIV, 198.

<sup>3</sup> *Ib.*, "Psychologie," §165.

<sup>4</sup> "Principles," I, 157.



4. *In perception there is no "reviving" of former impressions.* The idea *a*, even if there should be one in perception, is not any one of the former sense-impressions of the object perceived. Few there are who nowadays believe that our former sense-impressions lie thick as ghostly bones in the tomb below the threshold of consciousness, waiting only some breath of life to raise them above the threshold as still ghostly images of their former selves. According to Höffding and a few others, the river Styx must be full of these ghostly wanderers. "Revive," "recall," "resurrect," "reproduce," "reawaken" are words used too often as shoddy explanations of the process in question.

Moreover, which of the many predecessors of the present sense-impression is the one "revived" and "reproduced," granting that such a "revival" were possible? Is there some particular former impression always on hand ready for the work of identification and recognition? Moreover, what a huge mysterious problem these authors have to solve in this doctrine of the preservation and reproduction of ideas! It is simply astonishing to me that nobody has raised any objections to Ward's solution, or rather description of these phenomena in his doctrine of the *Continuum* (Ency. Brit., Art. Psych.). He denies the usual statement that our ideas pass out of consciousness and are again reproduced as images of their former selves. But an upholder of the old theory might ask, what becomes of all our former thoughts and knowledge, where are they now? Ward answers that they are all in consciousness still, only "subconsciously." Our whole mental life, according to him, forms a *continuum*, in which all the past is, along with the present, in consciousness. The present is only more prominently there, the past, with all its thoughts, feelings, etc., is there also, but *subconsciously*. Hence there is no problem of reproduction of ideas. By "subconscious" Dr. Ward does not mean unconscious, but rather some degree or measure of consciousness. The whole doctrine, for me at least, is amply refuted by the fact that it is purely and absolutely a false description of the facts. I am conscious neither subconsciously, unconsciously nor consciously at the present moment of time of the vast majority of my former mental experiences. As far as my present consciousness goes, they are absolutely non-existent.

But to return to the more immediate problem, does consciousness say that the "reproduced former idea" recognizes the present sense-impression, or that the present sense-impression recognizes the former reproduced idea? Not at all. Plain, unvarnished, unprejudiced consciousness says in perception, "This is object so-and-so," and in recognition

proper, "This is object so-and-so again." Of the "recognition" and "identification" of the present sense-impression *A* by the "reproduced memory-image" *a*, there is never a sign.<sup>1</sup> Moreover, how can the presentation *Object A* recognize or identify another mental presentation *Object a*? Consciousness, in fact, says nothing of the two presentations being there in perception at all. It is simply *Object A*.

Prof. Höffding says, "*Under other circumstances*" the idea-element in perception could be recalled as an independent idea ("Psych.," 166); *i. e.*, I might say, if it had not been as it actually is, it might have been otherwise; or, in other words, if it had not been a single, indivisible idea, there might have been two. He thereby admits that there is only *one* presentation there, and that the other is a fiction. Observation shows the fact that there is only one presentation there in perception. Then, "*tant pis pour les faits*" Prof. Höffding may answer along with the speculative Frenchman; they must be there *unconsciously*. In the world of science, he who finds his hypothesis at variance with large parts of the evidence forthwith abandons it; even in ordinary life a man whose supposition proves to be flatly contradicted by observation is expected to hesitate. Prof. Höffding has ever, however, his City of Refuge—the Unconscious.

5. *There is an unwarrantable extension of the term "recognition" to perception.* There is a class of phenomena which Prof. Höffding has remarked, a class which is really what we all call recognition. This class he has designated "immediate recognition," and rightly so. The extension, however, of this designation to the whole field of perception is quite unjustifiable.

We have often a very strong conviction of having been before in the same place or in the same circumstances as those of the present presentation, but, nevertheless, can recall no other circumstances which confirm the conviction. The places or circumstances appear perfectly familiar, though we know we have never seen them before. They appear, as we generally say, *known* to us. As Höffding says, "A single trait of a countenance, a color-tint of the sky, an accidentally heard word can appear to us as known (*bekannt*) without us being able or even without us feeling the need of referring them to definite former occurrences. They appear to us differently from perfectly new sensations." This peculiar feeling of *knownness* he calls the *Bekanntheitsqualität*.

This feeling of strange familiarity is, however, character-

<sup>1</sup>Cf. Bourdons, "La Reconnaissance de phenom. nouveaux," *Rev. Philos.*, 36, p. 630, and A. Lalande, "Sur les paramnesias," *Ib.* 36, 485-497.

istic of only a very small class of phenomena. That is why they are called *strange*. Everyone knows, however, that this feeling of strange familiarity does not characterize all our perceptions. If so, then why the *strangeness*, the wonder and the curiosity which are aroused when the phenomena actually do occur? Höfding has quite unwarrantably, however, extended the designation of this class of phenomena to the whole field of perception. Our perceptions are not all accompanied by this characteristic of strange familiarity or knownness. Moreover, these special cases of familiarity are cases of perception + recognition, as will be explained in a succeeding essay. If so, it is doubly false to say that perception is recognition, *Kennen Wiedererkennen*, etc.

6. *The cause of the Bekanntheitsqualität is incorrectly given.* Höfding draws a distinction between "old sensations" (*alte Empfindungen*) and "new sensations" (*neue Empfindungen*). The "old sensations" are apparently those which we have had before, which can be "revived" and "reproduced." These sensations have been repeated. On the physiological side there has been repeated practice. The movements, whatever they may be, take place more readily, with less expense of effort and strain than they did at first. Consequence—there appears on the psychical side a corresponding change, viz., the quality of knownness or the *Bekanntheitsqualität*, which is apparently of an elementary, irreducible kind. Old sensations, when accompanied by this feeling, this *Bekanntheitsqualität*, are known, even thereby do they appear as *old* or *known*.

The "new sensations," on the other hand, according to Höfding, do not possess this quality of knownness. If they did, we could not distinguish between the old and the new sensations.

But what are these "new sensations"? Firstly, they may mean sensations which we never had before—sensations of a new sense, to which we have not yet developed. Or they may mean the first sensations which we ever had at the beginnings of our lives. Secondly, Höfding means by "new sensations," although he does not notice the confusion, the fresh, vivid sense-impressions in contradistinction to the revived faint images of former impressions. The one class is old, faint, ghostly; the other fresh, new. The fresh, vivid and present sense-impression is a new creation in comparison with the revived image of the old, which is only a reproduction and not a fresh creation.

The fatal point for this plausible doctrine is that *these sense-impressions, these "new sensations" of the second class demand, on the physiological side, just as much practice*

and repetition as the so-called "old sensations," and therefore should possess just as much the *Bekanntheitsqualität* as the "old sensations." The sense-impression red has, in all probability, the same nervous concomitant processes as the image red; in both the nerve processes have had very extensive practice and repetition, the one as much as the other. Hence, the sense-impression should have the *Bekanntheitsqualität* just as much as the image-element. In Höffding's perception formula ( $\mathfrak{A}$ ) then, the sense-impression element  $A$  ought already to have the *Bekanntheitsqualität* before the so-called image-element  $a$  arrives, and ought to have it just as much as the other. If such be the case, Höffding's hypothesis of the image-element  $a$  contributing the knownness element is utterly useless.

The more probable explanation of this phenomenon of strange familiarity will be attempted in another essay.

7. Finally, *the theory utterly fails in its attempt to explain sense-illusions or what may be called abnormal perception.* In journeying upon a road in the deep twilight, I see the threatening figure of a robber with up-drawn, menacing arm. At the moment I am most certain and positive that it is a robber. For me, at the time, it is just like all my other perceptions, perfectly normal. Upon closer investigation, however, I perceive the objective figure to be in reality the stump of a tree with its gaunt, outstretched limb. Now I perceive that my first impression was abnormal, that it was a sense-illusion.

And now for the recognition-theory explanation: "The sense-illusion is a mistaken, partial perception. With ( $\mathfrak{A}$ )  $b$  and  $c$  unite themselves, although in this case they do not really belong with  $A$ . A mistaken interpretation of an objective impression takes place, as, e. g., when a white towel in the moonshine is taken for a white figure, or wreckage on the coast for men." (Höffding, "Psych.," 197.)

To say that a sense-illusion is a mistaken perception is easy, but no explanation; to say it is a partial perception is partially false, and it gives no explanation at all *why I thought there was a robber there*, which is the essence of the matter. The formula given by Höffding is false to the facts,—it runs ( $\mathfrak{A}$ )  $+ b + c$ . If  $A$  represents the stump of the tree, then ( $\mathfrak{A}$ ) means that the stump of the tree is perceived as such, which is absolutely contrary to the facts. If I had perceived the stump of the tree, it would have been no sense-illusion; but I did not perceive the tree. It was a robber. The formula, therefore, gives a false description of the facts, and, moreover, provides no explanation of the fact that another presentation or perception, viz., the robber, arises. In fact, the

theory is again at fault in its description, for in the sense-illusion there was no *second* perception, viz., the thought or perception of the robber. That was the first and only perception. The perception of the tree stump came *later*, not as in the formula first, and then we knew that the first perception (the robber) was an illusion.

Granting even that we perceive the tree stump ( $a$ ) first, which of course we do not, why should  $b + c$ , the thought of the robber, arise? The recognition-theory formula gives no explanation whatever.

Let us, however, suppose that in  $(a) + b + c$ ,  $A$  means the dark outline of the tree stump and  $+ b + c$  the perception of the robber. Again it would be a false description of the facts.

We do not perceive a dark outline and then have the second thought of a robber. The robber is the first and only perception. Moreover, in the quick flash of the perception, who would be aware of the recognition process involved in ( $a$ ), viz., the sense-impression  $A$ , the calling up by association through similarity (comparison also!) of the "memory image"  $a$ , the identification, recognition and fusion of the two and the birth of the new product by psychical chemistry (which is neither  $a$  nor  $A$ )? All these processes would presumably produce the perception of the dark outline of the tree stump. This, however, we do not perceive; it is, rather, a robber.

But why pursue the investigation further? Any one of the above objections ought to make us hesitate before ever again giving countenance to this old, traditional theory, which has ruled the psychological world since the days of Democritus and Empedocles.